

# इंटरनेट

# मानक

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Mazdoor Kisan Shakti Sangathan

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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 6893-4 (1987): Proforma for purchase specification for machine tools, Part 4: Vertical turning and boring lathes [PGD 3: Machine Tools]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

**PROFORMA FOR PURCHASE  
SPECIFICATION FOR MACHINE TOOLS  
PART 4 VERTICAL TURNING AND BORING LATHES  
( First Revision )**

“पुनर्विचार १९८६”  
“RE-AFFIRMED 1996”

**1. Scope** — Recommends the proforma for the preparation of purchase specification for vertical turning and boring lathes with table diameter up to 1 600 mm. It also gives essential information about the vertical turning and boring lathes and their accessories which will enable the user to assess the usefulness and suitability for requirements.

**2. Proforma**

Specification	Reference to Indian Standard	Unit	Actual Value
(1)	(2)	(3)	(4)
<b>2.1 Capacity</b>			
2.1.1 Maximum swing with side head		mm	
2.1.2 Maximum swing with side head in lowest position		mm	
2.1.3 Maximum distance between table top and bottom of cross rail		mm	
2.1.4 Maximum distance between table top and ram face/turret face		mm	
2.1.5 Maximum torque on table		Nm	
<b>2.2 Table</b>			
2.2.1 Diameter		mm	
2.2.2 No. of speed(s)/range			
2.2.3 Nominal size of T-slot	IS : 2013-1985	mm	
2.2.4 No. of T-slots/spacing	IS : 2642-1985	No./mm	
2.2.5 Centre bore ( internal spigot )		mm	
2.2.6 Maximum weight that can be loaded on the table		kg	
<b>2.3 Side Head</b>			
2.3.1 Vertical traverse along column		mm	
2.3.2 Working stroke of slide along the centre of table		mm	

Adopted 28 December 1987

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Specification	Reference to Indian Standard	Unit	Actual Value
( 1 )	( 2 )	( 3 )	( 4 )
<b>2.4 Vertical Heads on Cross Rail</b> <b>2.4.1</b> No. of vertical heads on cross rail <b>2.4.2</b> Swivel of ram/turret slide <b>2.4.3</b> Horizontal travel of heads on cross rail from table centre line <b>2.4.4</b> Travel of slide a) on ram head b) on turret head <b>2.4.5</b> Diameter of holes on turret <b>2.4.6</b> Diameter of holes in ram slide <b>2.4.7</b> Turret head configuration <b>2.4.8</b> Rapid traverse of head		— Degrees mm  mm mm  mm mm mm mm	
<b>2.5 Cross Rail</b> <b>2.5.1</b> Vertical travel along column(s) <b>2.5.2</b> Speed of travel		mm mm/min	
<b>2.6 Feeds</b> <b>2.6.1</b> No. of feeds/range a) Vertical head(s) b) Side head(s)		mm/rev or mm/min mm/rev or mm/min	
<b>2.7 Tools</b> <b>2.7.1</b> Maximum shank section of tool(s) that can be accommodated in : a) Side head(s) b) Vertical head(s)	IS : 1983-1985	mm mm	
<b>2.8 Lubrication</b> Type of lubrication ( Details to be specified )			

Specification	Reference to Indian Standard	Unit	Actual Value	
( 1 )	( 2 )	( 3 )	( 4 )	
<b>2.9 Electricals</b>				
<b>2.9.1</b> Total power		kW		
<b>2.9.2</b> Power supply		V, Ph, Hz		
<b>2.9.3</b> Motor(s)				
<b>2.9.3.1</b> Main				
a) Type	IS : 1231-1974	kW rev/min		
b) Frame size and mounting				
c) Output(s)				
d) Speed(s)				
e) No.-of-phase				
f) Power factor		percent V Hz — — °C		
g) Efficiency				
h) Rated voltage				
j) Frequency				
k) Type of duty				
l) Class of insulation	IS : 4691-1985 IS : 6362-1971 IS : 4729-1968	— — — — — — —		
m) Ambient temperature				
n) Type of protection				
p) Type of cooling				
q) Vibration limits				
r) Any other features				
<b>2.9.3.2</b> Other motor(s)				
a) Type	IS : 1231-1974	kW rev/min		
b) Frame size and mounting				
c) Output(s)				
d) Speed(s)				
e) No. of phase		percent V Hz — — °C		
f) Power factor				
g) Efficiency				
h) Rated voltage				
j) Frequency				
k) Type of duty				
l) Class of insulation	IS : 4691-1985 IS : 6362-1971 IS : 4729-1968	— — — — — — —		
m) Ambient temperature				
n) Type of Protection				
p) Type of cooling				
q) Vibration limits				
r) Any other features				

**IS : 6893 ( Part 4 ) - 1987**

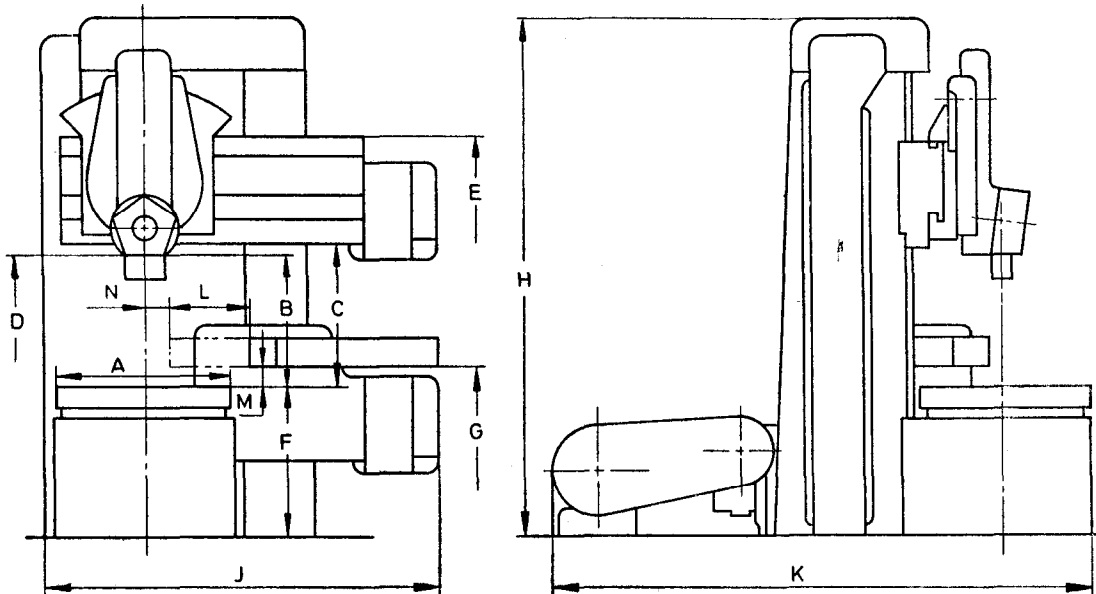
Specification	Reference to Indian Standard	Unit	Actual Value
( 1 )	( 2 )	( 3 )	( 4 )
<b>2.10 Coolant Pump</b> a) Out put(s) of motor b) Speed of motor c) Discharge of pump at maximum working height	IS : 2161-1962	kW rev/min l/min	
<b>2.11 Geometrical and practical tests</b>	IS : 6197-1971		
<b>2.12 Noise emitted by machine</b>	IS : 10988-1984	dB(A)	
<b>2.13 Mechanical guarding</b> <b>2.14 Colour(s)</b> <b>2.15 Weight of machine with electricals and standard accessories</b> <b>2.16 Floor place required</b> ( length × width ) <b>2.17 Standard accessories:</b> Details of accessories <b>2.18 Special accessories:</b> Details of accessories	IS : 9474-1980 IS : 5-1978	kg     mm × mm	
<p><b>Note</b> — While submitting of quotations, the following information shall be furnished by the manufacturers/ suppliers together with technical literatures and capacity chart of the machine ( see Appendix A for representative capacity chart for vertical boring and turning lathes.</p> <p>a) Hardness of column guideways, and            b) Any other special features.</p>			

## APPENDIX A

[ Clause 2.18 ( Note ) ]

REPRESENTATIVE CAPACITY CHART FOR VERTICAL  
TURNING AND BORING LATHES

Note — Manufacturer's/supplier's shall specify the basic information called for in the figure below:



- |  |   |
|--|---|
| A — Table diameter   | = |
| B — Maximum distance, table top to turret/ram face                             | = |
| C — Maximum distance under cross rail  | = |
| D — Maximum vertical travel of turret/ram                                      | = |
| E — Maximum travel of cross rail   | = |
| F — Height of table top from ground level                                      | = |
| G — Side head travel, vertical   | = |
| H — Overall height   | = |
| J — Overall length   | = |
| K — Overall width  | = |
| L — Maximum horizontal travel of side head post along the centre line of table | = |
| M — Maximum and minimum distance between the side tool post and top of table   | = |
| N — Minimum distance between side tool post and table centre                   | = |

## EXPLANATORY NOTE

The proforma for preparation of purchase specification for machine tools has been prepared to enable a prospective buyer to collect data from various manufacturers/suppliers for purpose of comparison. This is meant to be sent out with an enquiry by the purchaser so that the manufacturers/suppliers can fill in the data and send it back to the purchaser to make the comparison easier for the purchaser.

Reference is made to the following Indian Standards in this standard:

- |                   |   |
|-------------------|---|
| IS : 5 - 1978     | Colours for ready mixed paints and enamels ( <i>third revision</i> )                                    |
| IS : 1231 - 1974  | Dimensions of three phase foot mounted induction motors ( <i>third revision</i> )                       |
| IS : 1983 - 1985  | Shank sections for single point turning and planing tools   |
| IS : 2013 - 1985  | Dimensions for T-slots ( <i>second revision</i> )   |
| IS : 2161 - 1962  | Coolant pump for machine tools  |
| IS : 2642 - 1985  | Spacing of T-slots ( <i>second revision</i> )   |
| IS : 4691 - 1985  | Degree of protection provided by enclosures for rotating electrical machinery ( <i>first revision</i> ) |
| IS : 4729 - 1968  | Measurement and evaluation of vibration of rotating electrical machines                                 |
| IS : 6197 - 1971  | Test chart for vertical boring and turning mills with table diameter up to 1 600 mm                     |
| IS : 9474 - 1980  | Principles of mechanical guarding of machinery  |
| IS : 10988 - 1984 | Method of measuring noise from machine tools ( excluding testing in anechoic chamber )                  |

This standard was first published in 1973. The Committee responsible for the formation of the standard decided to revise the same based upon experience. In the present revision detailed requirement of motors and coolant pump, and requirements for environment and safety aspects have also been included in the proforma.